

# **EXHIBIT 32**

CONFIDENTIAL

**Expert Report of Professor Meredith Rosenthal**

**March 25, 2019**

## TABLE OF CONTENTS

<b>I. Qualifications .....</b>	<b>2</b>
<b>II. Assignment.....</b>	<b>5</b>
<b>III. List of Materials Considered.....</b>	<b>6</b>
<b>IV. Overview of Structure and Organization of Chapter .....</b>	<b>7</b>
<b>V. Summary of Opinions .....</b>	<b>8</b>
<b>VI. Industry Background.....</b>	<b>11</b>
A. Pharmaceutical Demand.....	11
B. Regulatory Oversight of Pharmaceuticals .....	15
C. Pharmaceutical Promotion: Tactics and Evidence of Impact .....	16
<b>VII. Promotion and Opioids.....</b>	<b>28</b>
A. Published Research.....	28
B. The Defendants’ Own Materials Recognize the Effects of Promotion on Opioid Sales ....	29
<b>VIII. Econometric Analysis – Direct Approach .....</b>	<b>33</b>
A. Data Source and Trends.....	34
B. Analytic Approach.....	41
C. Results.....	44
<i>Calculation of But-For MMEs .....</i>	<i>50</i>
<i>Sensitivity with Respect to Specific Defendants.....</i>	<i>52</i>
<b>IX. Econometric Analysis – Indirect Approach.....</b>	<b>53</b>
A. Data and Methods .....	55
B. Results.....	57
<b>X. Does a theory of “under-treated pain” Explain the Growth in Opiate Prescribing?.....</b>	<b>62</b>
A. Cancer Patients at the End of Life.....	65
B. Patients with Acute Pain .....	66
C. Results for Cancer and Acute Pain.....	68
<b>XI. Summary and Conclusions .....</b>	<b>73</b>

**I. QUALIFICATIONS**

1. My name is Meredith B. Rosenthal. I am the C. Boyden Gray Professor of Health Economics and Policy at the Harvard T.H. Chan School of Public Health and an Academic Affiliate of Greylock McKinnon Associates (“GMA”), a consulting and litigation support firm. My principal research interests concern the economics of the health care industry.

2. At Harvard, I have taught in undergraduate, Masters- and Ph.D.-level health economics and health policy courses. Since 1996, I have worked on a number of consulting matters through GMA, most of which relate to litigation in health care markets generally and the pharmaceutical industry in particular. I have also submitted written testimony in litigation concerning alleged anticompetitive conduct for a variety of drugs, which are listed in Attachment A. Most relevant to the current matter, I have submitted written and in some cases presented oral testimony in litigation concerning allegations of improper marketing of the following prescription drugs: Actiq,<sup>1</sup> Bextra,<sup>2</sup> Celexa and Lexapro,<sup>3</sup> Lyrica and Zyvox,<sup>4</sup> Geodon,<sup>5</sup>

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<sup>1</sup> *In re: Actiq Sales and Marketing*, United States District Court for the Eastern District of Pennsylvania, No. 07-CV-4492.

<sup>2</sup> *In re: Bextra Marketing Sales Practices and Product Liability Litigation*, United States District Court for the Northern District of California, MDL No. 1699, No. M:05-CV-01699-CRB.

<sup>3</sup> *In re: Celexa and Lexapro and Sales Practices Litigation*, United States District Court for the District of Massachusetts, Case No. 09-MD-2067 (NMG); MDL No. 2067.

<sup>4</sup> *Mary K. Jones v. Pfizer Inc., et al.*, United States District Court for the Southern District of New York, Civil Action No. 1:10-cv-03864-AKH.

<sup>5</sup> *In re United States of America v. Pfizer, Inc.*, United States District Court for the District of Massachusetts, Case No. 1:10-CV-11166-DPW.

Ketek,<sup>6</sup> Lupron,<sup>7</sup> Neurontin,<sup>8</sup> Nexium,<sup>9</sup> Premarin, Prempro and Premphase,<sup>10</sup> Risperdal,<sup>11</sup> Rituxan,<sup>12</sup> Vioxx<sup>13</sup> and Zyprexa.<sup>14</sup>

3. I have conducted research on a wide variety of health economics topics, with a focus on the financing and organization of the U.S. health care system. Specific topics I have studied include the effect of payment incentives on provider behavior,<sup>15</sup> payment and delivery system

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<sup>6</sup> *Sergeants Benevolent Association Health and Welfare Fund v. Sanofi-Aventis U.S. LLP*, United States District Court for the Eastern District of New York, No. 08-CV-179.

<sup>7</sup> *In re: Lupron Marketing and Sales Practices Litigation*, United States District Court for the District of Massachusetts, MDL No. 1430, No. 01-CV-10861.

<sup>8</sup> *In re: Neurontin Marketing and Sales Practices Litigation*, United States District Court for the District of Massachusetts, MDL No. 1629, No. 04-10981; *Gregory Clark and Linda Meashey v. Pfizer Inc., and Warner-Lambert Company, LLC*, Philadelphia County Court of Common Pleas, No. 1819; *Elizabeth Judy and Stephen Brown v. Pfizer, Inc.*, individually and as successor in interest to Parke-Davis and Warner-Lambert, Inc., Circuit Court of the City of St. Louis, State of Missouri, Cause No. 042-01946, Division No. 1; and *In re: Neurontin Marketing and Sales Practices Litigation*, as it relates to: *Kaiser Foundation Health Plan v. Pfizer, Inc.*, United States District Court for the District of Massachusetts, MDL No. 1629, No. 04-10981-PBS, No. 04-10739-PBS.

<sup>9</sup> *Commonwealth Care Alliance and Glen Crenshaw v. AstraZeneca Pharmaceuticals L.P. and Zeneca Holdings, Inc.*, Commonwealth of Massachusetts, Superior Court, Trial Court Department, No. 05-CV-0269 BLS.

<sup>10</sup> *Krueger v. Wyeth, Inc.*, United States District Court for the Southern District of California, Civil Action No. 03CV2496 JAH (AJB).

<sup>11</sup> *Charles Foti, Attorney General ex rel. State of Louisiana v. Janssen Pharmaceutica, Inc.*, 27th Judicial District Court, Parish of St. Landry, No. 04-C-3967-D and *The State of Texas, ex rel. Allen Jones v. Janssen, L.P.*, District Court, 250th Judicial District, Travis County, Texas, No. D-1GV-04-001288.

<sup>12</sup> *United States ex rel. John Underwood v. Genentech, Inc.*, United States District Court for the Eastern District of Pennsylvania, No. 03-CV-3983.

<sup>13</sup> *Kleinman v. Merck & Co.*, No. ATL-L-3954-04 and *Martin v. Merck & Co.*, No. ATL-L24-05, Superior Court of New Jersey, Law Division, Camden County.

<sup>14</sup> *In re: Zyprexa Products Liability Litigation*, United States District Court for the Eastern District of New York, MDL No. 1596, Civil Action No. 05-CV-4115. I also submitted testimony in related state matters.

<sup>15</sup> See M. Rosenthal, "Risk Sharing and the Supply of Mental Health Services," *Journal of Health Economics*, 19(6), November 2000, pp. 1047-65; M. Rosenthal, R. Frank, Z. Li, and A. Epstein, "From Concept to Practice: Early Experience with Pay-for-Performance," *Journal of the American Medical Association*, 294(14), October 2005, pp. 1788-93; and M. Rosenthal, Z. Li, A. Robertson, and A. Milstein, "Impact of Financial Incentives for Prenatal Care on Birth Outcomes and Spending," *Health Services Research*, 44(5), Part 1, October 2009, pp. 1465-79.

reform,<sup>16</sup> and advertising and promotion of prescription drugs.<sup>17</sup> I have published more than 150 peer-reviewed journal articles, essays, and book chapters.

4. I received an A.B. in International Relations from Brown University in 1990 and a Ph.D. in Health Policy (Economics Track) from Harvard University in 1998. A more complete description of my qualifications is found in my *Curriculum Vitae*, which is included as Attachment A to this Report.

5. I am being compensated at a rate of \$825 per hour for my time. The compensation due to me is for the work performed and it is not contingent upon my opinions, my conclusions, or the outcome of this matter. The opinions I state in this report are stated within a reasonable degree of professional certainty in the areas of healthcare economics and econometrics. I reserve the right to respond to, rebut, opine on, or incorporate opinions offered by other experts in these matters.

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<sup>16</sup> See M. Rosenthal, "Beyond Pay for Performance: Emerging Models of Provider-Payment Reform," *The New England Journal of Medicine*, 359(12), September 2008, pp. 1197-1200; M. Rosenthal, M. Friedberg, S. Singer, D. Eastman, Z. Li, and E. Schneider, "Effect of a Multipayer Patient-Centered Medical Home on Health Care Utilization and Quality: The Rhode Island Chronic Care Sustainability Initiative Pilot Program," *JAMA Internal Medicine*, September 2013, PMID: 24018613; and S. Edwards, M. Abrams, M. Rosenthal, *et al.*, "Structuring Payment to Medical Homes After the Affordable Care Act," *Journal of General Internal Medicine*, 2014, PMID: 417661.

<sup>17</sup> M. Rosenthal, *et al.*, "Promotion of Prescription Drugs to Consumers," *The New England Journal of Medicine*, 346(7), February 2002, pp. 498-505; M. Rosenthal, *et al.*, "Demand Effects of Recent Changes in Prescription Drug Promotion," *Forum for Health Economics & Policy*, 6(1), January 2003, pp. 1-26; M. Mello, M. Rosenthal, and P. Neumann, "Direct-to-Consumer Advertising and Shared Liability for Pharmaceutical Manufacturers," *Journal of the American Medical Association*, 289(4), January 2003, pp. 477-81; J. Donohue, E. Berndt, M. Rosenthal, A. Epstein, and R. Frank, "Effects of Pharmaceutical Promotion on Adherence to the Treatment Guidelines for Depression," *Medical Care*, 42(12), December 2004, pp. 1176-85.

## II. ASSIGNMENT

6. I understand that this litigation, brought by the City of Cleveland, the City of Akron, Cuyahoga County and Summit County (collectively the “Bellwether governments”), alleges among other things that the “Defendants’ conduct in promoting opioid use, addiction, abuse, overdose and death has had severe and far-reaching public health, social services, and criminal justice consequences, including the fueling of addiction and overdose from illicit drugs such as heroin.”<sup>18</sup> The governments further allege that the opioid epidemic and the need for increased services “arose from the opioid manufacturers’ deliberately deceptive marketing strategy to expand opioid use, together with the distributors’ equally deliberate efforts to evade restriction on opioid distribution.”<sup>19</sup>

7. In this Report, I refer to the manufacturers’ deceptive marketing strategy and tactics as “manufacturer misconduct.” This report does not address non-marketing misconduct.

8. My assignment is to answer the following questions framed by plaintiffs’ counsel, all to a reasonable degree of certainty in the area of healthcare economics and econometrics:

- *Manufacturer substantial contribution causation.* Do you have an opinion as to whether the combined effect of the Defendant manufacturers’ promotion of prescription opioids

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<sup>18</sup> Second Amended Complaint, *In Re National Prescription Opiate Litigation*, MDL No. 2804, Case No. 17-md-2804, United States District Court for the Northern District of Ohio, Eastern Division, May 18, 2018 (hereafter Cuyahoga Complaint), ¶ 19; and Corrected Second Amended Complaint, *In Re National Prescription Opiate Litigation*, MDL No. 2804, Case No. 17-md-2804 (referring to Case No. 18-op-45090), United States District Court for the Northern District of Ohio Eastern Division, May 18, 2018 (hereafter Summit Complaint), ¶ 20. I refer to both complaints as the Complaints.

<sup>19</sup> Cuyahoga Complaint, ¶ 3 and Summit Complaint, ¶ 3.